LUMMI NATION
SPILL PREVENTION AND RESPONSE CAPABILITY DEVELOPMENT

2019 Annual Synthesis Report

Prepared For:
Lummi Indian Business Council

Prepared By:
Water Resources Division
Lummi Natural Resources Department

January 2020

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Introduction

Large amounts of crude oil, petroleum products, and other hazardous materials are transported and stored near the Lummi Indian Reservation (Reservation). These hazardous materials are transported by ships, pipelines, trucks, and railroad and are used, produced, and/or stored throughout the Reservation area, particularly in the Cherry Point Heavy Impact Industrial Zone immediately north of the Reservation boundary. Accidents, equipment failure, and human error have the potential to result in large spills and disastrous human and environmental consequences. Many of these hazardous materials are toxic to people and animals if inhaled, ingested, or contacted. Oil and chemical spills or releases to waters on or adjacent to the Reservation have the potential to threaten public health and safety and destroy some of the most productive and valuable ecosystems in the world. Spills or releases of petroleum products, chemicals, or other hazardous materials to land can threaten public safety, public health, and the environment. To date, there has not been a large hazardous material spill on or near the Reservation that has impacted Lummi Nation Waters. However, future residential and economic growth on the Reservation, in the adjacent Cherry Point Heavy Impact Industrial Zone, and in areas upstream from the Reservation, will increase the risk of a hazardous material emergency on the Reservation.

Because of the potential consequences, it is important for the Lummi Nation to develop and implement a plan to effectively respond to a hazardous material spill or release on or adjacent to the Reservation. The Lummi Natural Resources Department (LNR) has been actively developing spill response capabilities since the mid-1990s and completed the Lummi Nation Spill Prevention and Response Plan (SPRP) in October 2005. An update to the 2005 SPRP was completed in late 2016 and approved by the Lummi Indian Business Council (LIBC) in early 2019. Continuing efforts to develop spill prevention and response capabilities include staff training and spill response drills, equipment upgrades, planning, research, and public outreach. These efforts contribute to achieving the Lummi Nation goals of protecting the public health and safety of Reservation residents and protecting treaty rights to fish and gather throughout all usual and accustomed areas. These activities also contribute to achieving the EPA strategic goals of clean and safe water and healthy communities and ecosystems.

This annual synthesis report is a summary of the Lummi Nation spill prevention and response capability development activities conducted during the January 1, 2019 through December 31, 2019 period. The activities are divided into the following categories: Staff Training and Oil Spill Response Drills, Equipment, Oil Spill Response Incidents, Public Outreach, and Data Collection/Research.

Spill Prevention and Response Capability Development Activities

1. Staff Training and Oil Spill Response Drills:

Spill prevention and response training for staff members is conducted through both dedicated classes and through tabletop and boom deployment exercises. The staff members identified below attended the following training programs, workshops, or oil spill response drills during 2019.

a) On January 3, 2019 Jeffery Solomon (LNR Natural Resources Technician II) completed two independent study courses offered by FEMA's Emergency Management Institute: "Introduction to Incident Command System, ICS-100 (IS-00100.c)" and "An Introduction to the National Incident Management System" (IS-00700.b). See attached training certificates.
b) On February 28, 2019 Frank Lawrence III (formerly Natural Resources Specialist II, currently Natural Resources Specialist III/Policy Representative I) completed the independent study course offered by FEMA's Emergency Management Institute: "An Introduction to the National Incident Management System" (IS-00700.b)." See attached training certificate.
c) On November 5, 2019, twelve (12) staff members of the LNR, 6 members of the Tulalip Tribes Public Works Department (TTPWD), 1 employee of the Marine Spill Response Corporation (MSRC), and 1 member of the Whatcom County Sheriff's Office Division of Emergency Management conducted a half-day oil spill response drill with boom deployment at the tidegates between Smuggler's Slough and Lummi Bay (NPS-13). See attached memorandum.
d) On November 7, 2019, Andy Ross (Water Resources Specialist III/Hydrologist) participated in the BP Cherry Point 2019 Worst Case Discharge Exercise at the Whatcom Unified Coordination Center near the Bellingham International Airport. See attached memorandum.
e) On November 14, 2019, Frank Lawrence III and Andy Ross participated in the Salish Sea Shared Waters Forum. See attached agenda.
f) On November 15, 2019, Hanna Winter (LNR Water Resources Specialist II), Andy Ross, Shamania James (LNR Water Resources Technician II), Jeff Solomon, and Amy Starzak (LNR Outreach Technician II) participated in the Phillips 66 Ferndale Refinery Maximum Most Probably Discharge Functional Exercise at the Whatcom Unified Coordination Center near the Bellingham International Airport. See attached memorandum.
g) On November 22, 2019, thirteen (13) staff members of the LNR, 3 member of the Lummi Nation Police Department (LNPD), 6 members of the Tulalip Tribes Public Works Department (TTPWD), and 1 employee of the Marine Spill Response Corporation (MSRC) conducted a half-day oil spill response drill with boom deployment at the mouth of Kwina Slough (NPS-18). See attached memorandum.

2. Equipment:

a) Routine maintenance of the 2010 Nissan Titan included regular servicing (e.g., oil and filter changes, multi-point inspection).
b) Routine maintenance of the 1996 Jeep Cherokee included regular servicing.
c) Routine maintenance of the *Responder* (spill response vessel) until it was replaced in March 2019.
d) The *Responder II*, a 26 ft purpose-built spill response boat made for the Lummi Natural Resources Department was received in March 2019. Routine maintenance was conducted for the remainder of the year.

3. Oil Spill Response Incidents:

Lummi Natural Resources staff responded three spill incidents in nearby waters.

a) The Lummi Nation Police Department responded to an explosion and fire, and potential spill from a crabbing vessel at Gooseberry Point on July 2, 2019. See attached memorandum.
b) On October 17, 2019, the F/V *Furious Sea* sunk at dock in the Sandy Point Marina, which resulted in a petroleum hydrocarbon sheen on the water and the eventual deployment of containment boom and sorbent materials, initially by the Washington Department of Ecology, and later by Global Dive and Salvage, after the U.S. Coast Guard federalized the response. See attached memorandum.
c) On Friday November 15, 2019, a small oil spill occurred at the Shell Puget Sound Oil Refinery located near Anacortes, Washington. Lisa Cook (LNR ESA Manager and Policy Representative) participated in the response, serving as the Tribal On-Scene Coordinator.

4. Public Outreach:

The oil spill prevention and response activities were publicized in the community through articles in the Lummi Nation monthly newspaper (*Squol Quol*). Copies of *Squol Quol* articles are available upon request.

a) The February 5, 2019 approval of an updated Lummi Nation Spill Prevention and Response Plan was published in the March 2019 *Squol Quol*, with an explanation of the Plan; as well as a description of, including how to enroll in, the Vessels of Opportunity (VOO) for oil spill response.
b) The November 5 and 22, 2019 Smuggler's Slough and Kwina Slough spill drills were reported in the December issue of the *Squol Quol*. Participation by LIBC, LNR, LNPD, MSRC and TTPWD was noted. In addition, the VOO article from March was republished in the December issue of the *Squol Quol*.

Information about oil spill prevention and response capabilities (e.g., emergency contact information and equipment list) is also published on the Water Resources Division page of the Lummi Natural Resources Department website (https://www.lummi-nsn.gov/Website.php?PageID=67).

5. Data Collection/Research:

The Lummi Natural Resources Department staff regularly conducts data collection activities and research in support of the overall departmental mission to protect and restore tribal natural resources. These data collection/research activities support the goals of the oil spill prevention and response capability development by documenting background and ambient conditions. This information will be useful in evaluating the effectiveness of response efforts in the event of an oil spill and to protect public health and safety.

In addition, the Lummi Water Resources Division has conducted a number of activities that support efforts to prevent and respond to spills including developing and adopting water quality standards, storm water management regulations, and regulations that identify civil fines for activities that negatively impact Lummi Nation Waters.

ATTACHMENTS

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Emergency Management Institute

FEMA

This Certificate of Achievement is to acknowledge that

JEFFREY R SOLOMON

has reaffirmed a dedication to serve in times of crisis through continued professional development and completion of the independent study course:

IS-00100.c
Introduction to Incident Command System, ICS-100

Issued this 3rd Day of January, 2019

Steven P. Heidecker
Acting Deputy Superintendent
Emergency Management Institute

0.2 IACET CEU

Emergency Management Institute

FEMA

This Certificate of Achievement is to acknowledge that

JEFFREY R SOLOMON

has reaffirmed a dedication to serve in times of crisis through continued professional development and completion of the independent study course:

IS-00700.b
An Introduction to the National Incident Management System

Issued this 3rd Day of January, 2019

0.4 IACET CEU

Steven P. Heidecker
Acting Deputy Superintendent
Emergency Management Institute

Emergency Management Institute

FEMA

This Certificate of Achievement is to acknowledge that

FRANK L LAWRENCE III

has reaffirmed a dedication to serve in times of crisis through continued professional development and completion of the independent study course:

IS-00700.b
An Introduction to the National Incident Management System

Issued this 28th Day of February, 2019

0.4 IACET CEU

Michael J. Sharon
Deputy Superintendent
Emergency Management Institute
Federal Emergency Management Agency

LUMMI INDIAN BUSINESS COUNCIL
2665 KWINA ROAD BELLINGHAM, WASHINGTON 98226 (360) 312-2000

DRAFT MEMORANDUM

DATE: **November 18, 2019**

TO: **Kara Kuhlman, Water Resources Manager**

FROM: **Andy Ross, Water Resources Specialist III/Hydrologist**

SUBJECT: **November 5, 2019, Smuggler's Slough Oil Spill Response Drill (NPS-13)**

The purpose of this memorandum is to summarize the spill drill that took place on November 5, 2019.

Participants:
The following staff and guests participated in the drill:

1. Frank Lawrence III, LNR Natural Resources Specialist I
2. Hanna Winter, LNR Water Resources Specialist II
3. Andy Ross, LNR Water Resources Specialist III/Hydrologist
4. Derek Vilar, LNR Fisheries Biologist II
5. Don Kruse, LNR Fisheries Biologist II
6. Michael Williams, LNR Fisheries Technician II
7. Paul Cline, Outreach and Education Coordinator
8. Randy Jefferson, LIBC Safety Officer
9. Shamania James, LNR Water Resources Technician II
10. Chris Phair, LNR Restoration Specialist I
11. Gregg Dunphy, LNR TFW-FFR Division Manager Biologist
12. Jesse Cooper, LNR Field Technician
13. Ken Schacht, Marine Spill Response Corporation (MSRC)
14. Hylmar Hunt, Tulalip Tribes Public Works Department
15. Thomas Gaba, Tulalip Tribes Public Works Department
16. Alan Enich, Tulalip Tribes Public Works Department
17. G. John Enick Jr., Tulalip Tribes Public Works Department
18. Michael Johnson, Tulalip Tribes Public Works Department
19. Drew Hatch, Tulalip Tribes Public Works Department
20. Wallace Kost, Whatcom County Sheriff's Office, Division of Emergency Management

Drill Strategy:
The exercise was a half-day oil spill response drill with containment boom (boom) deployment. The goal of the drill was to practice the strategy intended to protect Smuggler's Slough from a potential oil spill north of Lummi Island utilizing NPS-13 (see Figure 1). The NPS consists of deployment of sorbent boom on the Lummi Bay side of the tidegates, or physically blocking the tidegates with plywood. The strategy was modified; containment boom was deployed on the Lummi Bay side of the tidegates and arranged in an "L" shape" to allow removal of product by vacuum truck (see Figures 1, 7, and 8).

Drill Goals:

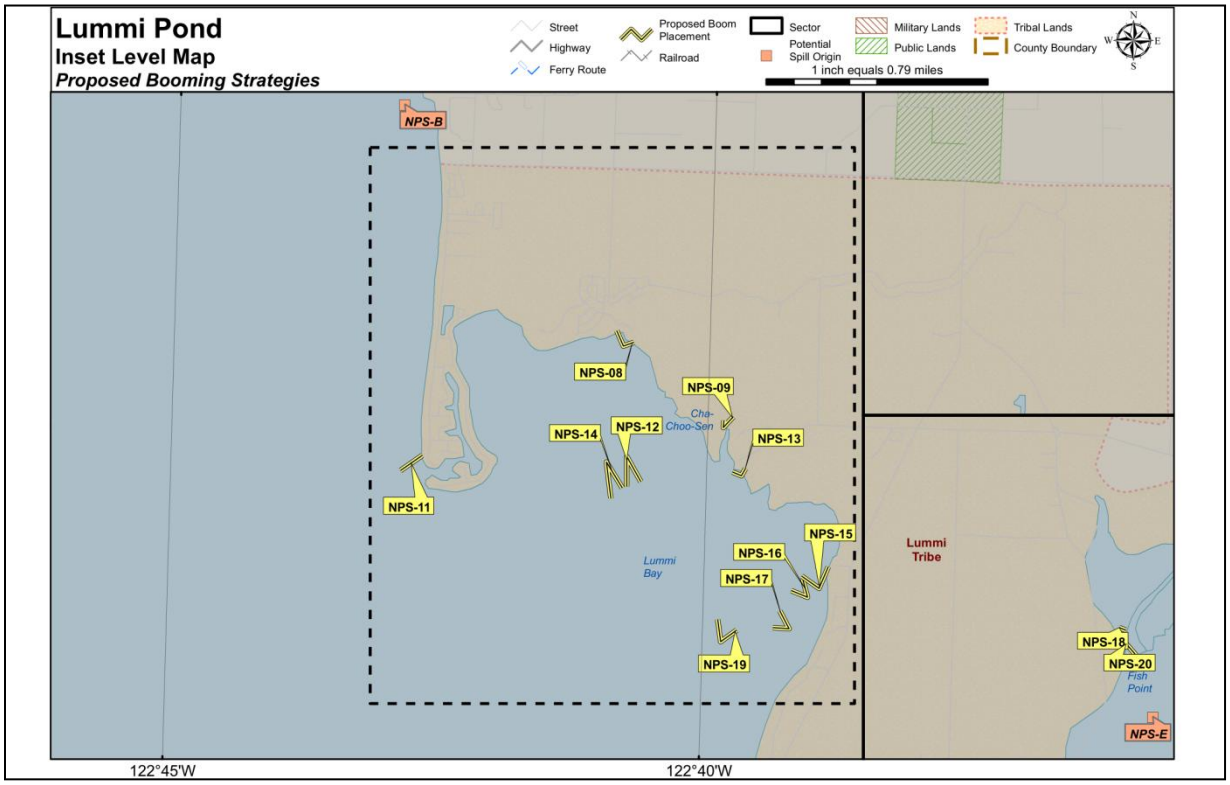
1. Ensure the safety of response personnel
2. Practice initial entrapment and recovery booming
3. Practice alternative boom deployment strategies as time permits
4. Practice teamwork

Briefing and Scenario:
During the pre-deployment briefing meeting held in Chulhtenem Conference Rooms A and B on the second floor of the Tribal Administration Building (TAB)(2665 Kwina Rd.), Andy outlined the scenario for the day, and Frank covered the rest, with Randy contributing to the safety briefing. Frank conducted staff assignments. In the scenario, an oil spill occurred as a result of a tanker accident north of Lummi Island, with the oil expected to enter Lummi Bay. Unified Command has directed the Lummi Spill Response Team to deploy NPS-13 to protect the Smuggler's Slough. Separate teams have been deployed to complete the booming strategies for the tidegates in the Seapond Aquaculture Facility Dike.

Briefing Agenda:

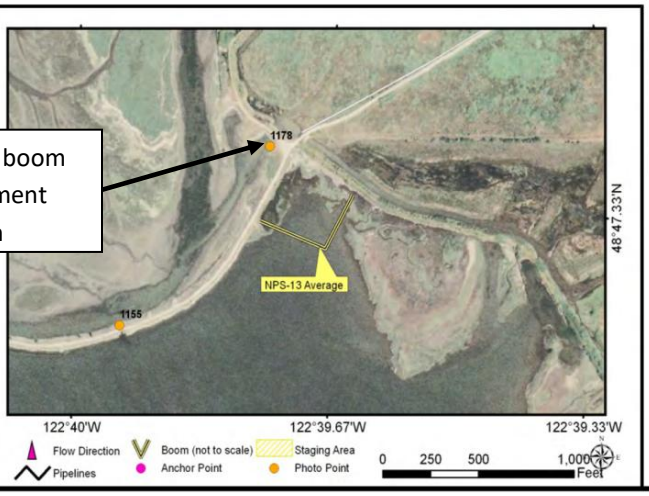
1. Check-In and Introductions
2. Scenario Briefing
3. Drill Objectives
4. Safety Briefing (Air Quality , PFDs, Hydration, Buddy System, Situational Awareness, Weather Conditions and Forecast, River Level)
5. Incident Command System (ICS) Review
6. Staff Assignments
7. Questions/Comments/Concerns

Tide Predictions for November 5, 2019:
Low 1.47 feet at 5:12 am
High 9.08 feet at 1:16 pm
Low 4.81 feet at 8:32 pm



Smuggler Slough Tide Gates — NPS-13-Average — 4-98

Site Lat/Long:	N 48° 47.310' / W 122° 39.707', Sector Map NPS-4
Strategy Objective:	Exclusion - Keep oil out of slough.
Implementation:	Block the five tide gates with plywood or sorbent boom. Note: no need to deploy on outgoing tide cycle.
Site Safety Note:	Remote dirt road - will need high clearance vehicle.
Field Notes:	No need to block on out going tide.
Resources Targeted:	tribal lands/resources, sensitive habitat
Watercourse Description:	Slough, ,



Correct boom deployment location

Suggested Equipment	
Quantity	**Description**
5 each	4 x 4 ft Plywood
50 ft	Sorbent Boom
10 each	Stake(s)
Suggested Personnel	
2	Laborer (s)

Status: Visited and Not Tested 07/30/2008

Figure 1. Location of the NPS-13 from the Geographic Response Plan.

Timeline:
Table 1 summarizes the spill drill events.

Table 1: Timeline of the November 5, 2019 Oil Spill Response Drill

Time	Event
09:11 am	Pre-deployment briefing meeting begins.
09:37 am	Pre-deployment briefing meeting ends, gathering equipment begins for boat and boom trailer crews, others head out to spill site.
09:55 am	The 16 ft fiberglass skiff and crew departs the TAB.
09:55 am	Boom Trailer crew departs the TAB.
10:01 am	Boom Trailer and boat crews arrive at the spill site. All others already present.
10:07 am	Three (3) anchors are driven into place to anchor the containment boom.
10:09 am	Boom trailer in place for boom deployment.
10:13 am	Rope deployment begins to pull boom across the water in front of the tidegates.
10:15 am	Containment boom deployment begins.
10:18 am	Work paused before 100 ft of boom was deployed in order to address how to tie-off containment boom to create the "L" shape without twisting it so that oil could easily pass underneath.
10:23 am	Resume containment boom deployment with an additional 100 ft of containment deployed. Instead of a "L" shape, considering a "V" shape with the apex of the "V" being the collection point.
10:31 am	200 ft of containment boom deployed and anchored.
10:34 am	For practice creating an "L" shape, tie off containment boom as if had proper fitting to prevent twisting of the boom.
10:38 am	Deployment completed, onsite debriefing begins
11:05 am	Boom is reloaded into the trailer.
11:07 am	Boom Trailer crew, Boat crew, and everyone else departs deployment site.
11:16 am	Boom Trailer, skiff, and remainder of participants arrive at TAB, begin unloading and repacking equipment.
11:45 am	De-briefing meeting begins.
12:31 pm	End of drill.

Results:
The following are "lessons learned" and recommendations resulting from the drill:

- The time required to gather and prepare equipment; and travel from the TAB to the spill drill site was 24 minutes. This is less than for previous spill drills, and is partly due to the close proximity of the spill site to the TAB, as well as not utilizing the *Responder II*. Deployment of the boom was completed in 27 minutes, though a delay of about 5 minutes occurred about 2/3rds of the way through the deployment when the issue arose of how to tie-off to the boom mid-section.

- The revised NPS-13 strategy was successful given the high tide, calm weather and water conditions, with the exception that additional equipment is needed to adequately secure the boom mid-section. It was agreed that the "L-shaped" containment boom deployment (see Figure 2) coupled with use of a vacuum truck was superior to the existing strategy of deploying sorbent boom or trying to place plywood in the tidegates. It was noted that sorbent boom and pads would likely be used in addition to the containment boom, as conditions warranted. Setting up multiple anchor points for the apex of the "L" was discussed, as it would provide for increased flexibility for the vacuum truck to operate as well as adapt to current conditions. The updated strategy will be transmitted to Ecology so that it can be included in the North Puget Sound GRP update, which is due to be published in May 2020.

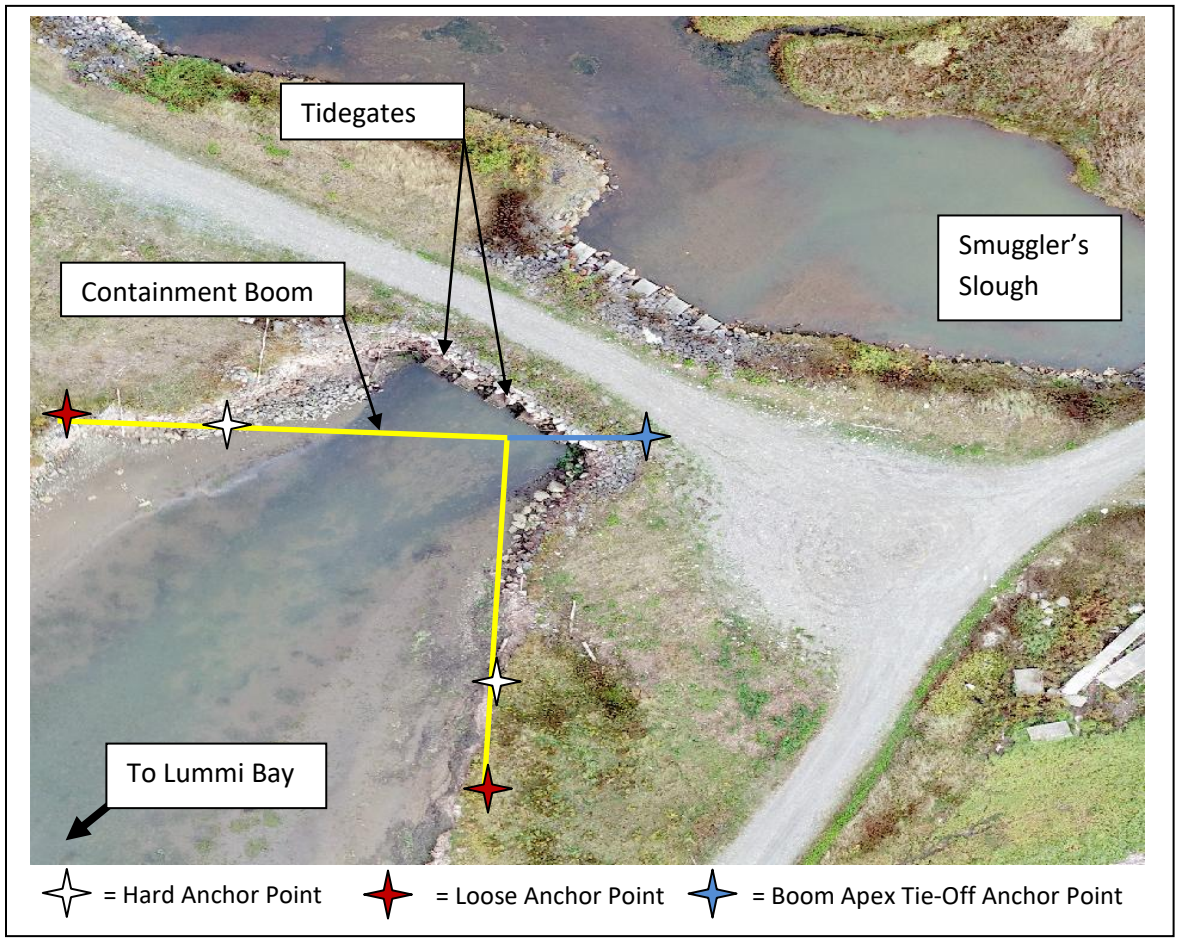


Figure 2. Example of "L-shaped" boom layout. Hard anchor points are set low enough to ensure the boom is secure during all tidal conditions. Loose anchor points allow slack in the containment boom so that the boom can "float" along the shoreline with varying tide levels and maintain containment. The apex tie-off anchor point creates the area where product can be recovered. Multiple apex tie-off anchors can be used to vary the shape of the area where product can be recovered as needed with varying tides, weather, and vacuum truck needs.

- Communication, teamwork, and adapting to the situation all went well. Boom deployment and pickup went smoothly and there were no accidents, injuries, or close calls.

    - All participants listened well, followed direction, and provided good questions and comments throughout the exercise.

- Additional suggestions included:

    - Fabricating a clamp that can be used at the joints[1] of the containment boom to allow the boom to be tied off without twisting the boom such that product could pass under the boom—the attachment point is midway between the top and bottom of the boom (see Figure 3). If the attachment point is the top of the boom, the top will be pulled towards the horizontal and raise the skirt. If the attachment point is the bottom, it will be pulled up, possibly to the water surface. Either situation diminishes the effectiveness of the boom.
    - Development of checklists for major and minor spills, as well as for various GRPs, and other boom deployment strategies.
    - Obtain a new tarp for the boom trailer that extends to the base of the back gate. The current tarp is ripped and becoming rigid, and does not cover the back gate, which allows sunlight to reach containment boom.
    - Spray paint, with the appropriate paint (that will stick to plastic), the top of the boom to mark the locations of the anchor points so that they are highly visible. The current markings (small anchors), are difficult to locate.
    - Confirm the location of all of the tow bridles (one is buried in the boom trailer) and bring them up to standard if they are lacking (e.g., no rope attached).
    - Consider obtaining a rope dispenser that can provide rope in 25 ft, 50 ft, and 100 ft lengths that can be used in the field.
    - Provide gloves to participants during the drill.
    - Setup/create anchor points for NPS 13 and all of the Seaponds Aquaculture Facility dike strategies that can be used in the event of a spill. This may involve drilling the large rocks along the dike, placement of Ecology blocks, and/or other measures.
    - Empty and repack the spill response container. In part to find out if any items have been damaged, as well as to repack the container with documentation of what is where, and labels for the various items/equipment.
    - Next year, perform NPS-13 and as many of the Seapond Aquaculture Facility Dike strategies as can be accomplished in a 2-hour period.
    - Create a living-list of tasks for spill preparedness.

[1] "Joints" are the areas between the foam floatation sections (see Figure 7).

- Create a means to record adaptations to strategies. The suggestion was to include them in the Spill Response Binder, and update strategies in the Geographic Response Plans when they are updated by Ecology.
- The website Oil Spills 101 (https://oilspills101.response.news/) was introduced. The site contains considerable information and resources about Geographic Response Plans, the Vessels of Opportunity program, the Incident Command System, and the Northwest Area Contingency Plan.
- More practice throughout the year would be beneficial and would facilitate upkeep of the equipment and rapid response.
- Encourage Shellfish hatchery personnel to participate in the spill drills.
- Placement of educational signs at the various response strategy locations that could also serve to help responders locate response strategy locations.

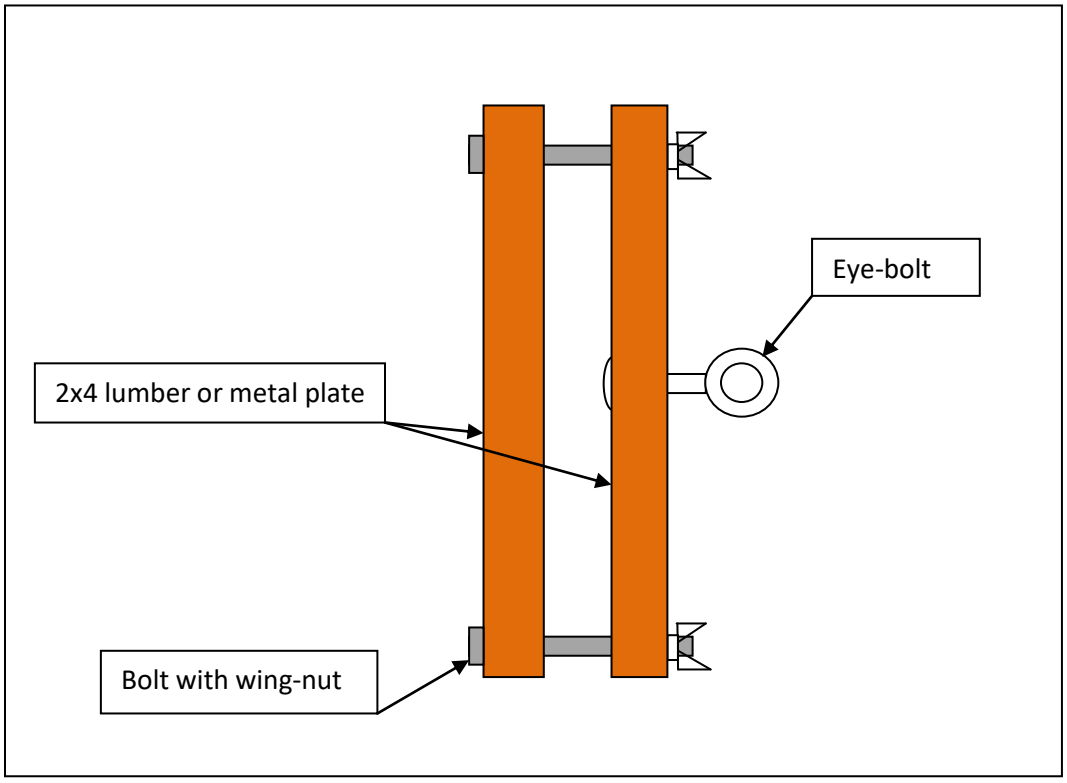


Figure 3. Schematic of the clamp configuration for attaching rope to the boom so that the boom does not twist when tied-off under tension to a rope. The clamp fits over the joints between the foam sections of the boom, and the rope attaches via the eye-bolt. The lower bolt and wing-nut could be replaced with a hinge.

Hazardous Waste Operations and Emergency Response (HAZWOPER) Statement of Training:
The Lummi Natural Resources Department has determined that participation in this spill drill provided sufficient annual refresher training/demonstration of competency for Lummi Indian Business Council (LIBC) employees who are members of the Lummi Spill Response Team to maintain either First Responder Awareness Level or First Responder Operations Level HAZWOPER certification pursuant to the Occupational Safety and Health Administration (OSHA) regulations described in 29 CFR 1910.120.

Figure 4. Shoreline crew begins placing anchor on west side of channel.

Figure 5. Rope staged for use to pull containment boom across the channel.

Figure 6. Boom deployment begins.

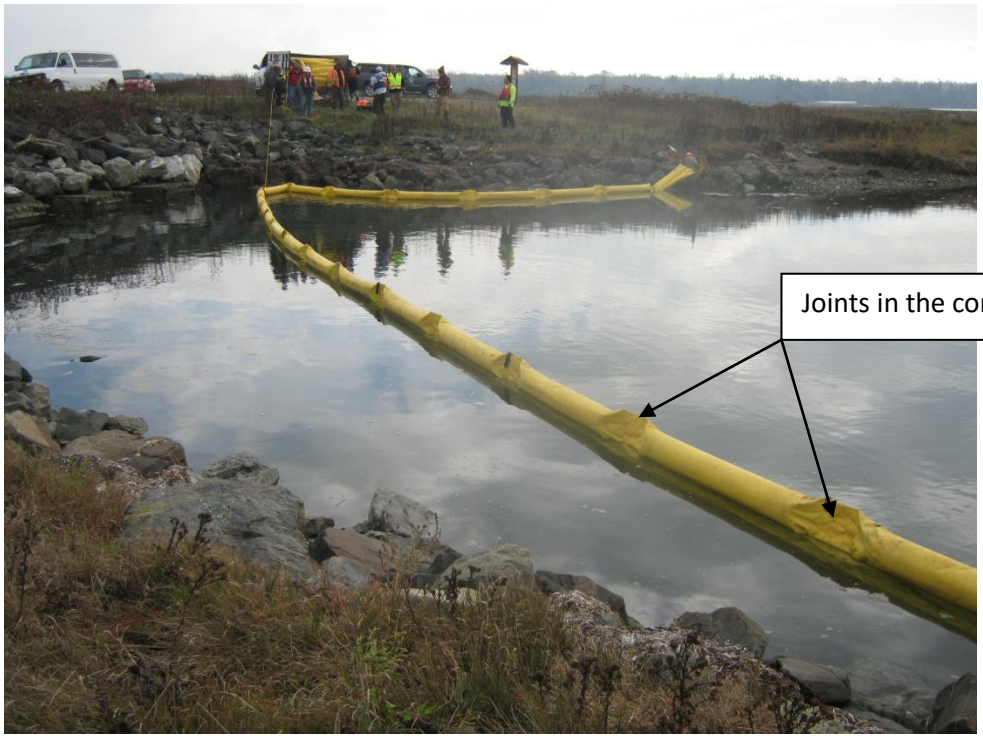


Figure 7. Boom deployment looking southeast (a loose anchor point on the far shore was not placed in this exercise).

Figure 8. Boom deployment looking northwest.

Figure 9. Example of a loose anchor point, without benefit of the “clamp” to attach the rope to the boom. Note that the skirt is being pulled up, which will reduce the effectiveness of the containment boom.

Figure 10. Reloading boom onto the trailer.

LUMMI INDIAN BUSINESS COUNCIL
2665 KWINA ROAD BELLINGHAM, WASHINGTON 98226 (360) 312-2000

MEMORANDUM

DATE: **November 7, 2019**

TO: **Kara Kuhlman, LNR Water Resources Manager**

FROM: **Andy Ross, LNR Water Resources Specialist III/Hydrologist**

SUBJECT: **BP Cherry Point Refinery 2019 Worst Case Discharge Exercise**

The purpose of this memorandum is to document the participation of one Lummi Natural Resources Department staff member in the BP Cherry Point 2019 Worst Case Discharge Exercise held on November 7, 2019. The drill was a tabletop exercise and was conducted at the Whatcom Unified Emergency Coordination Center in Bellingham, WA. The exercise plan is attached.

Participation in the drill was as follows:

- Planning Section, Environmental Unit:
    - Andy Ross (Water Resources Specialist III/Hydrologist)

Exercise Schedule

Thursday, November 7, 2019		
Time	**Event**	**Presenter**
06:30 - 07:00	Breakfast and Sign In (Badging)	All
07:30 - 08:00	Welcome, Introductions, Expectations, Review Objectives, Agenda, Ground Rules	K. Mallick/ L. Lindgren
08:00 - 08:30	201 Brief—Begin Exercise Play	Outgoing IC
08:30	Initial UC Meeting	UC
11:00 - 12:00	**Working Lunch**	**All**
16:00 - 17:00	Planning Meeting	All
17:00	Exercise critiques	All
17:30	Adjourned**	All

Please note: ALL PLAYERS NEED TO VACATE THE WUECC PRIOR TO 18:00

SALISH SEA SHARED WATERS FORUM

November 14, 2019
Four Points Sheraton
Bellingham, WA

OVERVIEW

In 2018, Washington State passed the Strengthening Oil Transportation Safety Act, which requires the state Department of Ecology Spills Program to coordinate with British Columbia and Canada to establish the Salish Sea Shared Waters Forum. The purpose of the Forum is to exchange information to enhance oil spill prevention, preparedness, and response, with the goal of minimizing risks and impacts of spills from vessel traffic in the Salish Sea. The Forum serves as a platform for open dialogue for all levels of government from both sides of the border, including Transport Canada, the U.S. and Canadian Coast Guards, Tribes and First Nations, environmental groups, and industry. The 2019 Forum is part of a multi-year series of forums intended to help advance our collective knowledge about current policies and practices in place in Washington State and B.C., and discuss potential safeguards to protect our shared waters and resources. The forum is a non-voting and non-decision-making entity.

Forum Goal

The goal of this Forum is to exchange information to enhance oil spill prevention, preparedness and response to minimize impact of oil spills to the Salish Sea (the shared waters of Washington and British Columbia). Participation in the workshops does not imply endorsement of any recommendations, additional or modified mitigation measures discussed by participating organizations, speakers or attendees. Instead the forum is intended to advance our collective knowledge about current policies and practices in place and discuss safeguards to protect our shared waters and resources.

Objectives

1. Increase knowledge of Tribal, First Nation, BC, Canadian, Washington State, and U.S. jurisdictions and authorities in maritime oil transportation safety
2. Share information on collaborative efforts underway to prevent and respond to spills
3. Provide an overview of marine shipping in Cascadia region, including changes and trends
4. Include tribal and First Nations perspectives
5. Strengthen relationships and trust

TIME	TOPIC	SPEAKER/PANELIST
Thursday November 14, 2019		
8:00	**Welcome and Introductions**	**Dale Jensen,** Director, Spills Program, WA Dept. of Ecology **Laurel Nash,** Assistant Deputy Minister, BC Ministry of Environment and Climate Change Strategy **Sarah Brace**, Executive Coordinator, Pacific States/BC Oil Spill Task Force
8:20	**Tribal Welcome**	**Frank Lawrence**, Natural Resource Policy, Lummi Nation
8:40	**Session 1: Oil movement Overview – the Big Picture** **Goal of session**: Provide an overview of the current and projected changes in vessel traffic trends; and share updates on current and projected safety and environmental measures.	*Moderator: Dale Jensen, WA Ecology* **Robert Lewis-Manning**, President, Chamber of Shipping **Mike Moore**, Vice President, Pacific Merchant Steamship Authority **Gerry O'Keefe**, Senior Director of Environmental Affairs, WA Public Ports Association
10:10	**Break**	
10:30	**Session 2a: Marine Emergency Response Systems** **Goal of session**: Provide an overview of the current emergency response system in the Straits and highlights from recent studies in Canada's Pacific region.	*Moderator: Sarah Brace, Task Force* **John Veentjer**, Executive Director, Marine Exchange of Puget Sound **Jim Hodgson**, Research Associate, Clear Seas Centre for Responsible Marine Shipping
11:45	**Lunch – Provided**	Courtesy of B.C. Ministry of Environment and Climate Change Strategies
1:15	**Session 2b: Marine Emergency Response Systems (continued)** **Goal of this session**: Learn about the existing measures in place now and what is being developed to ensure the highest level of vessel traffic safety, spill prevention, and response capability.	*Moderator: Dale Jensen, WA Ecology* **Jaimie Bever**, Executive Director, WA Board of Pilotage Commission **Captain Carl Soderberg**, Director, BC Coast Pilots **Captain Bikramjit Kanjilal,** Director of Marine Development, Trans Mountain Expansion Project

TIME	TOPIC	SPEAKER/PANELIST
		Michael Lowry, Communications Manager, Western Canada Marine Response Corporation (WCMRC)
2:45	**Break**	
3:00	**Session 3: Tribal and First Nation Perspectives about the impacts of oil transportation** **Goal of session**: The Coast Salish Gathering is an affiliation that provides a policy platform for Washington Tribes and British Columbia First Nations, to meet with US and Canadian federal governments and WA and BC provincial governments. The platform builds a collaborative body for mutual shared efforts to identify priority environmental concerns, issues, and projects in the transboundary Coast Salish Region within the Salish Sea biome. The discussion today is to share the impact of oil transportation and the threat to treaty and aboriginal rights, culture and way of life.	*Moderator: Debra Lekanoff, Swinomish Tribe, Coast Salish Gathering Coordinator* **Ray Harris,** Chemanium First Nation; Co-Chair Coast Salish Gathering and Co-Chair First Nation Summit **Patti Gobin,** Tulalip Tribes, Treaty Rights Office **Chief Dalton Silver,** Sumas First Nation **Tom Ehrlichman**, Swinomish Indian Tribal Contract Attorney **Melody Allen**, Suquamish Attorney
4:45	**Key take-ways and Wrap up**	**Dale Jensen,** Director, Spills Program, WA Dept. of Ecology
5:00	**Adjourn**	


PACIFIC STATES | BRITISH COLUMBIA
OIL SPILL
TASK FORCE


BRITISH
COLUMBIA
Ministry of
Environment and
Climate Change Strategy


DEPARTMENT OF
ECOLOGY
State of Washington

LUMMI INDIAN BUSINESS COUNCIL
2665 KWINA ROAD BELLINGHAM, WASHINGTON 98226 (360) 312-2000

MEMORANDUM

DATE: **November 18, 2019**

TO: **Kara Kuhlman, LNR Water Resources Manager**

FROM: **Andy Ross, LNR Water Resources Specialist III/Hydrologist**

SUBJECT: **Phillips 66 Ferndale Refinery Maximum Most Probable Discharge Functional Exercise**

The purpose of this memorandum is to document the participation of five Lummi Natural Resources Department staff member in the Phillips 66 Ferndale Refinery Maximum Most Probable Discharge (MMPD) Functional Exercise on November 15, 2019. The drill was a tabletop exercise and was conducted at the Whatcom Unified Emergency Coordination Center in Bellingham, WA. The exercise plan is attached.

Participation in the drill was as follows:

- Planning Section, Environmental Unit
    - Hanna Winter (LNR Water Resources Specialist II)
    - Andy Ross (LNR Water Resources Specialist III/Hydrologist)
- Observers (primarily with the Environmental Unit)
    - ShamaniaJames (LNR Water Resources Technician II)
    - Jeff Solomon (LNR Water Resources Technician II)
    - Amy Starzak (LNR Outreach Technician II)

Email from Bill Rinesmith, Phillips 66 Emergency Response Team Lead/FSO:

From: Rinesmith, Bill: [mailto:Bill.Rinesmith@p66.com]
Sent: Tuesday, October 22, 2019 3:03 PM
To: Kara D. Kuhlman
Subject: AMPD Exercise:

Kara Kuhlman
Interim Water Resources Manager
Lummi Natural Resources Department
2616 Kwina Road
Bellingham, WA 98226
October 22, 2019
HSE.975.2019.002

RE: Phillips 66 Ferndale Refinery 2019 Oil Spill Tabletop Exercise
Dear Kara,

Phillips *66* cordially invites you to its exercise scheduled for **Thursday, November 15, 2017** at the WHATCOM UNIFIED EMERGENCY COORDINATION CENTER "WUECC" located at 3888 Sound Way, Bellingham, WA 98226.

Your attendance as a TOSC for this exercise is formally requested. As a leader and stakeholder in emergency response, your insight and expertise in the area of emergency management will enable our local business unit and away team the opportunity to gain valuable feedback and lessons learned.

Agenda

November 15th, 2019

0730 – 0815	*Check-in*
0815 – 0830	*Welcome and Introduction*
0830 – 0845	*Drill Ground Rules and Kickoff with ICS 201 brief*
0845 – 1545	*Exercise Starts*
1200 – 1300	*Working Lunch*
1545	***Exercise Concludes***
1545 – 1600	*Hot Wash*
1600 – 1630	*Debrief*
1630	*Depart*

Further event details including your RSVP and accommodations for non-local guests are included in the registration link here http://www.cvent.com/d/whq9q2. Please RSVP by **Friday, November 8th, 2019** through this registration link.

Please forward this invitation to others that would like to attend.

Sincerely,

Bill Rinesmith

LUMMI INDIAN BUSINESS COUNCIL
2665 KWINA ROAD BELLINGHAM, WASHINGTON 98226 (360) 312-2000

DRAFT MEMORANDUM

DATE: **December 2, 2019**

TO: **Kara Kuhlman, Water Resources Manager**

FROM: **Andy Ross, Water Resources Specialist III/Hydrologist**

SUBJECT: **November 22, 2019, Kwina Slough Oil Spill Response Drill (NPS-18)**

The purpose of this memorandum is to summarize the spill drill that took place on November 22, 2019.

Participants:
The following staff and guests participated in the drill:

1. Frank Lawrence III, LNR Natural Resources Specialist II/Policy Representative I
2. Hanna Winter, LNR Water Resources Specialist II
3. Andy Ross, LNR Water Resources Specialist III/Hydrologist
4. Derek Vilar, LNR Fisheries Biologist II
5. Don Kruse, LNR Fisheries Biologist II
6. Michael Williams, LNR Fisheries Technician II
7. Shamania James, LNR Water Resources Technician II
8. Chris Phair, LNR Restoration Specialist I
9. Gregg Dunphy, LNR TFW-FFR Division Manager
10. Jesse Cooper, LNR Field Technician
11. Jamie Mattson, LNR Water Resources Specialist II/Planner
12. Jeff Solomon, LNR Natural Resources Technician II
13. Amy Starzak, LNR Outreach Technician II
14. Scott Whitting, Marine Spill Response Corporation (MSRC)
15. Jacob James, Tulalip Tribes Public Works Department
16. Thomas Gaba, Tulalip Tribes Public Works Department
17. Alan Enich, Tulalip Tribes Public Works Department
18. G. John Enick Jr., Tulalip Tribes Public Works Department
19. Michael Johnson, Tulalip Tribes Public Works Department
20. Drew Hatch, Tulalip Tribes Public Works Department
21. Ed Conway, Lummi Nation Police Department, Natural Resource Officer
22. Aaron Hillaire, Lummi Nation Police Department, Natural Resource Officer
23. Bambi Solomon, Lummi Nation Police Department, Jail Alternatives Officer

Drill Strategy:
The exercise was a half-day oil spill response drill with containment boom (boom) deployment. The goal of the drill was to deploy boom strategy NPS-18 of the Geographic Response Plan (GRP) for the North Puget Sound (NPS) region (see Figure 1). NPS-18 calls for the deployment of 300 feet of containment boom to be placed across the mouth of Kwina Slough at Fish Point for the purpose of collecting oil by the shoreline for removal by vacuum truck. The strategy was modified as follows:

- 200 feet of boom was deployed in an "L" shape where interior of the apex of the "L" was a pocket where oil could be collected (see Figure 2).
- In addition to the deployment described in NPS-18, which provides for oil collection when water is flowing upstream into Kwina Slough, the boom was deployed so that oil could also be collected for removal with downstream flow in Kwina Slough (see Figure 2).

Drill Goals:

1. Ensure the safety of response personnel
2. Practice initial entrapment and recovery booming
3. Practice alternative boom deployment strategies as time permits
4. Practice teamwork

Briefing and Scenario:
During the pre-deployment briefing meeting held in Chulhtenem Conference Rooms A and B on the second floor of the Tribal Administration Building (TAB)(2665 Kwina Rd.), Andy and Frank outlined the scenario for the day, Andy addressed the remaining agenda items except for Staff Assignments. Under the scenario, a storage tank at the Kinder Morgan facility on Smith Road failed. Product could not be contained and had moved down Deer Creek into Tenmile Creek and, eventually, the Nooksack River delta. Merle Jefferson Sr. is at the Emergency Operations Center and is the Tribal On-Scene Coordinator in the Unified Command. The Unified Command has directed that NPS-18 be deployed.

Briefing Agenda:

1. Check-In and Introductions
2. Scenario Briefing
3. Drill Objectives
4. Safety Briefing (Air Quality , PFDs, Hydration, Buddy System, Situational Awareness, Weather Conditions and Forecast, River Level)
5. Incident Command System (ICS) Review
6. Staff Assignments
7. Questions/Comments/Concerns

Tide Predictions for November 22, 2019:
Low 2.03 feet at 6:34 am
High 9.00 feet at 1:25 pm
Low 2.01 feet at 8:18 pm

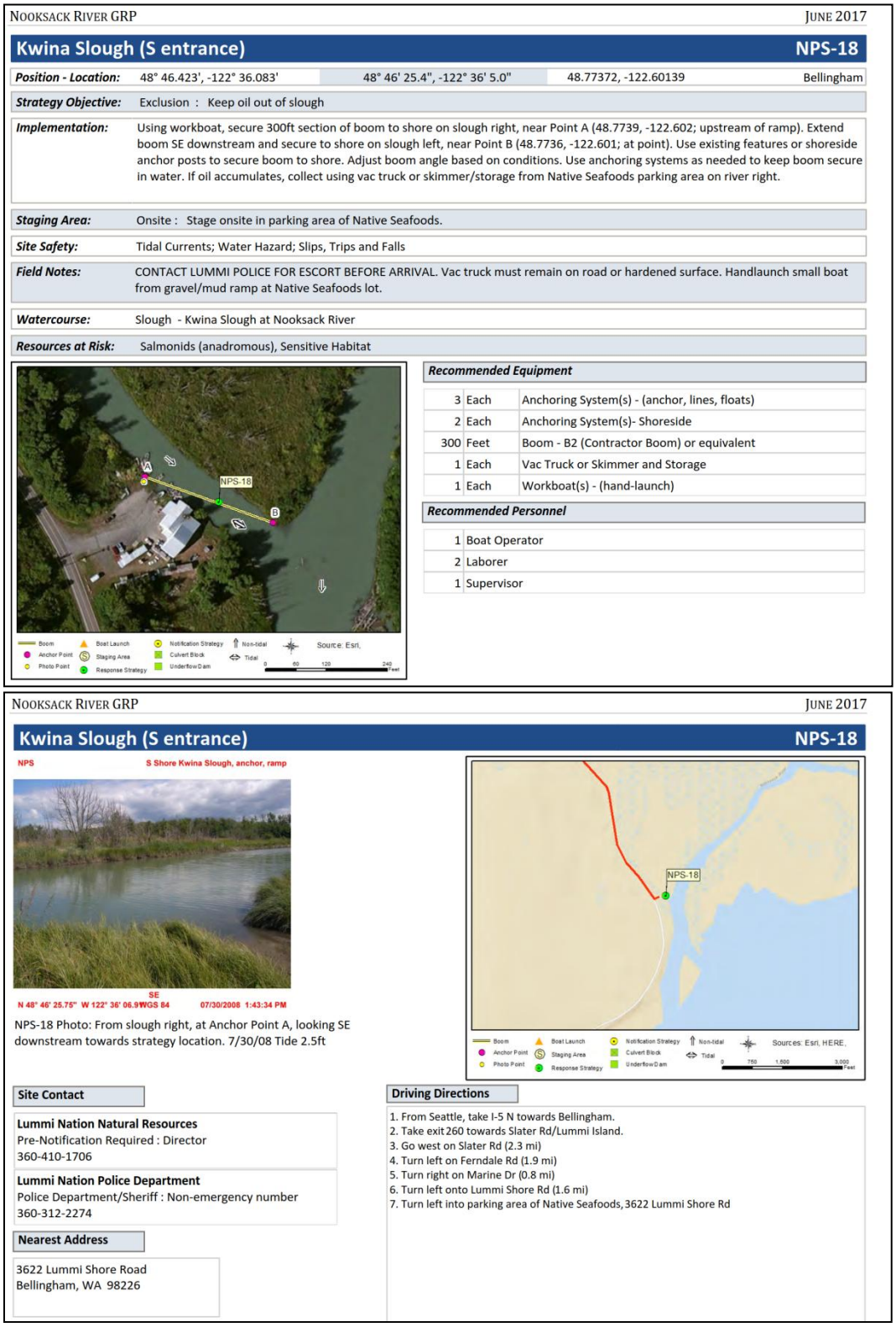


Figure 1. Location of NPS-18 from the North Puget Sound Geographic Response Plan.

Timeline:
Table 1 summarizes the spill drill events.

Table 1. Timeline of the November 22, 2019 Oil Spill Response Drill

Time	Event
09:04 am	Pre-deployment briefing meeting begins.
09:15 am	Pre-deployment briefing meeting ends, gathering equipment begins for boat and boom trailer crews, others head out to spill site.
09:20 am	The Lummi Nation Police Department (LNPD) jet boat departs the TAB (note, Officers called to an incident and did not arrive at the spill drill site until 10:33 am and the LNPD vessel was not utilized for the drill).
09:30 am	The 16 ft fiberglass skiff and crew departs the TAB.
09:32 am	Titan with gear from the Spill Response Trailer leaves the TAB.
09:36 am	Boom Trailer crew departs the TAB.
09:38 am	16 ft fiberglass skiff launched.
09:43 am	Boom Trailer arrives and is in place for boom deployment. All other personnel and equipment present (except LNPD boat and crew as noted above).
09:48 am	Start discussion of revised strategy for containment boom deployment.
09:54 am	Initiate boom deployment.
09:57 am	200 ft of boom in water.
10:02 am	End of boom anchored on eastern shore near mouth of Kwina Slough (south of Beach Access Point [BAP]).
10:06 am	Establish three-metal-T-post anchor on western shore of Kwina Slough immediately south of BAP.
10:10 am	End of boom anchored to three-metal-T-post anchor by the BAP.
10:12 am	Apex of the "L" of the boom deployment anchored to tree just north of the BAP.
10:13 am	Begin de-brief of deployment, strategize for next deployment.
10:16 am	Collect the 200 feet of boom deployed initially to the BAP in preparation of starting the second boom deployment.
10:23 am	Begin deploying boom across Kwina Slough to the north of the BAP.
10:26 am	North end of boom anchored on eastern shore of Kwina Slough north of BAP.
10:29 am	South end of boom anchored at the tree immediately north of the BAP.
10:33 am	Apex of the "L" of the boom deployment anchored to the three-metal-T-posts by the BAP.
10:36 am	Re-anchor south end of boom.
10:37 am	Detach boom from anchors, arrange boom on water to facilitate easy retrieval of boom onto Boom Trailer.
10:47 am	All boom reloaded onto trailer. Additional time taken to repack some of the boom that remained in the trailer.
10:48 am	De-briefing meeting begins at spill drill site.
10:52 am	Demobilization begins.
10:56 am	Boom Trailer leaves site.
10:58 am	16 ft skiff leaves site.
11:01 am	Boom Trailer arrives at TAB.
11:03 am	16 ft skiff arrives at TAB.
11:50 am	Begin working lunch/de-brief of drill.
12:15 am	End of drill.

Results:
The following are "lessons learned" and recommendations resulting from the drill:

- The time required to gather and prepare equipment and travel from the TAB to the spill drill site was 28 minutes. This is less than for most previous spill drills, and is partly due to the close proximity of the spill site to the TAB, as well as not utilizing the *Responder II*. The first deployment of the boom was completed in 18 minutes. The second boom deployment, including retrieval of boom from the first deployment was completed in 20 minutes.

- The modified NPS-18 strategy was successful given the high tide, calm weather and water conditions, with the exception that additional equipment was needed to adequately secure the boom mid-section to form the apex of the "L" shape (see November 18, 2019 Memorandum documenting the November 5, 2019 LNR Spill Drill, first bullet under "Additional suggestions included," and Figure 3, where a clamp is described that can be used to anchor containment boom mid-section). The modified strategy will be transmitted to Ecology so that it can be included in the North Puget Sound GRP update, which is due to be published in May 2020.

- Communication, teamwork, and adapting to the situation all went well, particularly with regards to the unpacking and repacking of boom from the Boom Trailer. The wrong end of the boom was removed from the trailer when boom deployment was initiated, which was compounded by the boom having been packed at the end of the November 5, 2019 Spill Drill in a different manner than is customarily used. This issue was rapidly addressed and remedied. Other than the issue described above, boom deployment and pickup went smoothly. There were no accidents, injuries, or close calls. Two different boat operators and crews were used for the two boom deployments, and the three-metal-T-post anchor system proved effective and easy to implement as a shore anchor.

- Additional suggestions included:

    - Care should be given to how boom is repacked in the Boom Trailer. It was suggested that flagging be put on the end of the boom to be pulled out of the Boom Trailer when first deploying boom.

    - Care should be taken when in the Boom Trailer re-loading boom, particularly when the trailer is nearly full. Footing can be slippery and is uneven, and if people are not paying attention, they could easily fall out of the trailer.

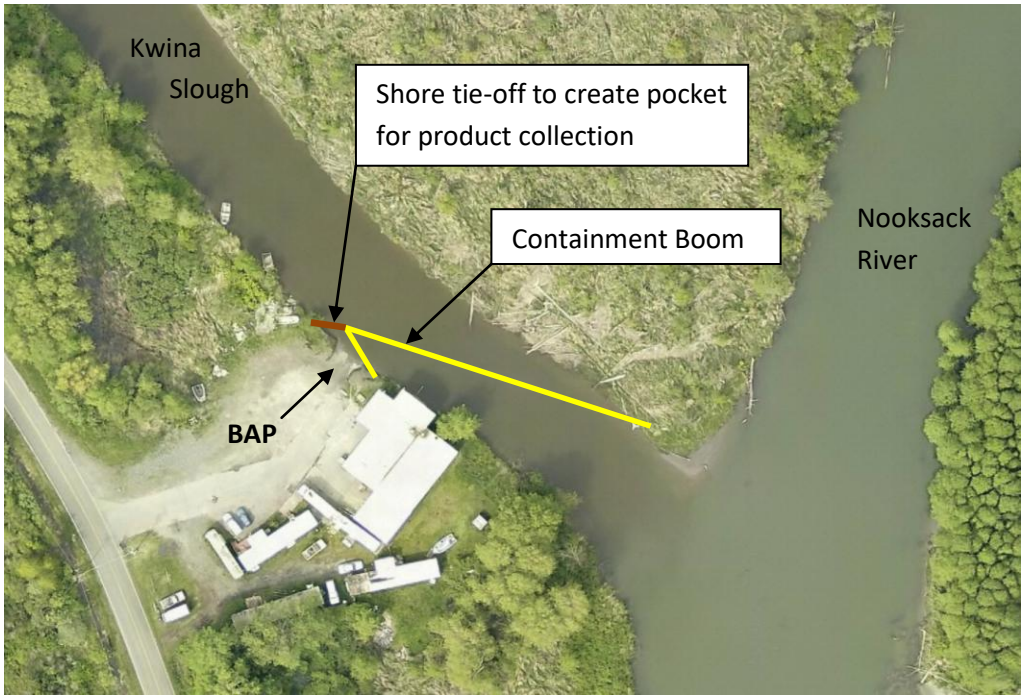
    - At regular intervals, practice tying knots, placing three-metal-T-post anchors and connecting them to containment boom, and attaching boom sections. Perform dry-land practice of boom deployment from the *Responder II*, including anchor deployment.

    - Perform more than two spill drills a year. Consider conducting drills with strategies that do not depend on sufficiently high tides, which would expand the

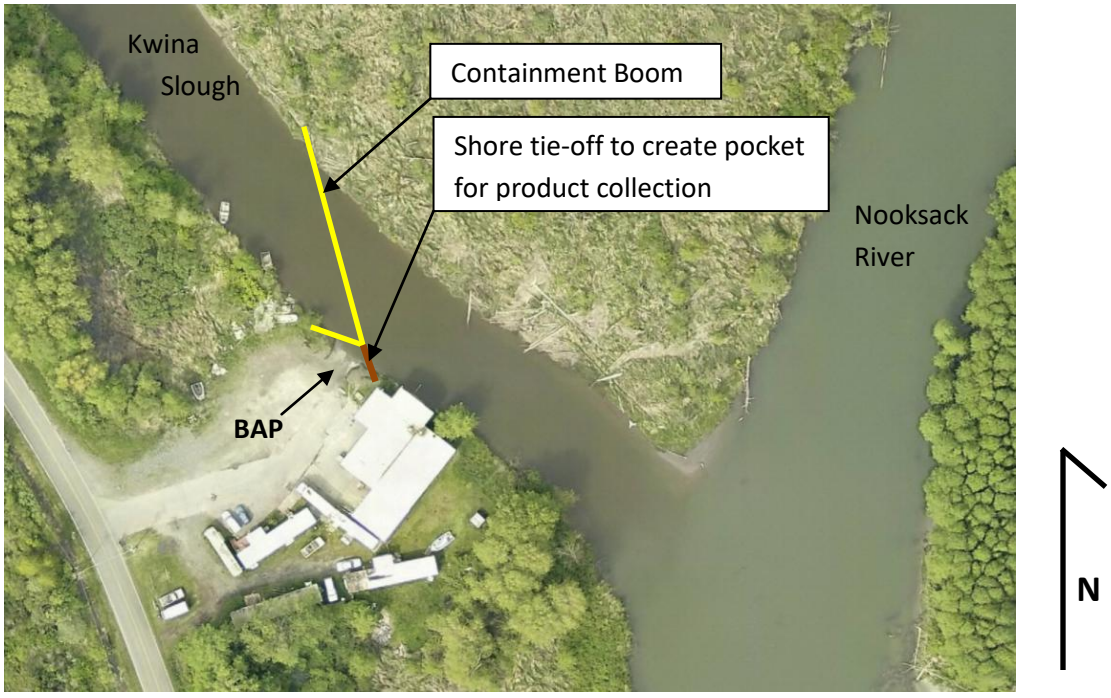
time of year that drills can be conducted. Perform drills with different Incident Commanders and Team Leaders. Consider performing a drill to determine how many exclusion and/or containment deployment strategies can be done in 2-3 hours, and/or until the boom runs out, starting at NPS-13 and continuing out on the Seapond Aquaculture Facility Dike.

- Procure an additional metal-T-post driver, as well as additional heavy-duty metal-T-posts. Assemble rope spools with 50 feet and 100 feet pre-cut lengths on them. Unpack and repack Boom Trailer to determine the condition of all the boom stored and remedy any deficiencies. Unpack and repack the Spill Response Container to 1), determine and remedy any issues with spill response equipment, 2) repack the container with equipment clearly labeled as well as clearly labeled areas for placement of the equipment within the container.

- Pre-position Ecology Blocks at the tidegates along the Seapond Aquaculture Facility Dike to facilitate rapid and effective anchoring of exclusion boom. Replace the Ecology Blocks that currently block transiting the entire Seapond Aquaculture Facility Dike with a gate that can be locked.



(a)



(b)

Figure 2. The upper image (a) shows boom deployment to collect product when the current is flowing to the north (as illustrated in NPS-18). Image (b) shows boom deployment to collect product when the flow in Kwina Slough is to the Nooksack River.

Hazardous Waste Operations and Emergency Response (HAZWOPER) Statement of Training:
The Lummi Natural Resources Department has determined that participation in this spill drill provided sufficient annual refresher training/demonstration of competency for Lummi Indian Business Council (LIBC) employees who are members of the Lummi Spill Response Team to maintain either First Responder Awareness Level or First Responder Operations Level HAZWOPER certification pursuant to the Occupational Safety and Health Administration (OSHA) regulations described in 29 CFR 1910.120.

Figure 3. Beginning of boom deployment.

Figure 4. Pulling containment boom towards the eastern shore of Kwina Slough near the mouth of Kwina Slough.

Figure 5. Anchoring south end of containment boom.

Figure 6. First boom deployment completed. Line attached to boom in foreground anchored to tree behind photographer. The line is attached at a water-anchor-attachment-point on the boom, which is not ideal and would be remedied by use of a mid-section clamp as described in the November 18, 2019 Memorandum documenting the November 5, 2019 LNR Spill Drill.

Figure 7. Three-metal-T-post anchor system.

Figure 8. Retrieving boom from first deployment and staging it for second boom deployment.

Figure 9. Near complete deployment of containment boom north of the Beach Access Point (the tie-off to create the pocket for product removal not yet in place). Inset shows boom anchor.

Figure 10. Anchoring of boom mid-section to create a pocket for product collection.

Figure 11. Retrieval of boom from second deployment. The boom was aligned to facilitate loading boom onto the trailer.

LUMMI INDIAN BUSINESS COUNCIL
2665 KWINA ROAD BELLINGHAM, WASHINGTON 98226 (360) 312-2000

MEMORANDUM

DATE: **July 3, 2019**

TO: **Merle Jefferson, Natural Resources Department Executive Director**

FROM: **Kara Kuhlman, Water Resources Manager**

SUBJECT: **Explosion/Fire and Potential Oil Spill from Crabbing Vessel at Gooseberry Point**

At approximately 1:00 pm on July 2, 2019, I was informed on a recent explosion and fire on board a 26-foot, Lummi tribal member-owned, crabbing vessel (the *F/V Racine* owned by Larry Finkbonner Jr.) at Gooseberry Point on the Lummi Indian Reservation. It was reported that there were no injuries and that Whatcom County Fire District No. 8 was onsite and actively fighting the fire. I immediately called you to report the incident and then proceeded to contact Lummi Natural Resources Department staff and Lummi Nation Police Department staff who were already on-scene to obtain more information. It was quickly determined that response by the Lummi Spill Response Team was not required or necessary as (1) firefighting activity was ongoing and (2) the spilled product was largely gasoline, which is highly flammable and should not be contained for recovery. I subsequently conducted a site visit to confirm the incident details obtained over the phone and then reported back to you.

It was later determined that an estimated 35-gallons of gasoline were on board the vessel at the time of the explosion and fire, though it is unknown how much gasoline was discharged to surface waters.

Figure 1. Photo of the F/V Racine at Gooseberry Point

LUMMI INDIAN BUSINESS COUNCIL
2665 KWINA ROAD BELLINGHAM, WASHINGTON 98226 (360) 312-2000

MEMORANDUM

DATE: **October 21, 2019**

TO: **Kara Kuhlman, Water Resources Manager**

FROM: **Andy Ross, Water Resources Specialist III/Hydrologist**

SUBJECT: **Pollution Release from sunken F/V *Furious Sea* in Sandy Point Marina**

At 5:42 pm October 17, 2019, you received an email notification from Geoff Baran with the Spill Prevention, Preparedness, and Response Program of the Washington Department of Ecology (Ecology) of the sunken vessel F/V *Furious Sea*. The email states:

> Earlier today Ecology responded to a report that the 59' F/V *Furious Sea* sank at its mooring near 4045 Salt Spring Drive, Ferndale, WA 98248. The vessel sank overnight when the bilge pumps failed. Please see the photos below.
>
> The vessel owner states that the fuel tanks were emptied five years ago, and that he has been using a five gallon fuel can to move the boat when needed. The vessel owner intends to attempt to refloat the vessel by pumping off the water at the next low tide.
>
> Ecology and the United States Coast Guard are closely monitoring the situation. This is the same location of the August 8, 2016 F/V *Coral Sea* sinking and spill.
>
> I will continue to send updates as more information becomes available. In the meantime, please do not hesitate to contact me if you have any questions, comments or concerns.

The vessel sank at the same dock where the F/V *Coral Sea* sank in 2016, a dock that originates on a vacant lot immediately north of 4505 Salt Spring Drive. Lummi Natural Resources staff expressed concerns to Federal, State, and County authorities about the F/V *Furious Sea* sinking when dealing with the F/V *Coral Sea*, to no avail.

At approximately 8:30 am, you directed (via email) Frank Lawrence III (Natural Resources Specialist I) and myself (Andy Ross, Water Resources Specialist III/Hydrologist) to conduct a site visit to assess the spill and determine appropriate response actions, as necessary. Frank Lawrence III and I arrived on-site at 9:14 am (the vacant lot immediately north of 4045 Salt Spring Drive, see Figure 1). There were no people on-site when we arrived, though as described later, the neighbor who resides immediately north of the vacant lot and owns the north side of the dock where the F/V *Furious Sea* sank did approach us and discussed the situation. On-site, Frank and I observed and documented the sunken vessel, sheens and debris on the water surface, an estimated 75 feet of absorbent pad deployed from the north side of the bow of the vessel to the south side of the dock beyond the vessel, and an estimated 50 feet of sorbent boom placed between the bow of the vessel and the dock (see Figures 2-4). Sheens were observed between the vessel and the dock (Figure 3), between the bow of the vessel and the shoreline (Figure 5), near the southeast side of the cabin, behind the cabin (Figure 6), along the south and north (Figure 7) sides of the

dock, and moving north off the end of the dock (see Figures 8 and 9). Figure 10 is a map-view of the distribution of the occurrence and movement of sheen on the water surface.

Frank and I determined that mobilization of a larger-scale response effort by the Lummi Nation Spill Response Team was not needed at the moment, as absorbent boom and pads had already been deployed at the site, and that the best course of action was to follow-up with and coordinate ongoing response efforts with Ecology and other first responders. We left the site at 9:31 am and returned to the office. I emailed Geoff Baran later that morning to find out who from Ecology and the U.S. Coast Guard (USCG) had been involved in the initial response effort, who deployed the sorbent materials, and what the current plan was since the boat had not been refloated on the next low tide, which would have been Thursday night/early Friday morning, as the owner had indicated would happen. The response to information about Ecology's current plan is that Ecology and the USCG will continue to monitor the situation and respond if any pollution release is reported.

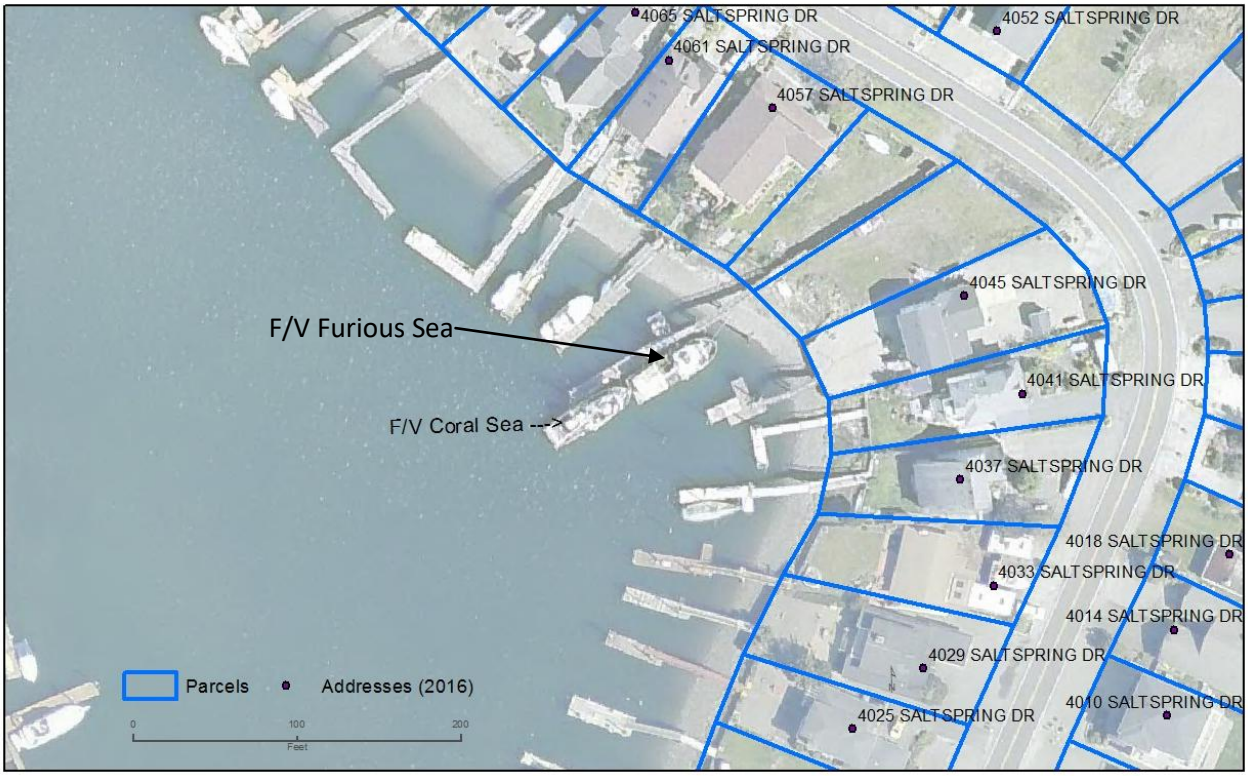


Figure 1. Overview of the spill site. The F/V *Furious Sea* is seen moored at the dock (as well as the F/V *Coral Sea*).

Figure 2. The F/V *Furious Sea* (yellow oval) sunken at dock. Note the sunken F/V *Coral Sea* behind.

Figure 3. Sheen, sorbent boom, and absorbent pad roll between and dock. Note containers of coolant and epoxy resin.

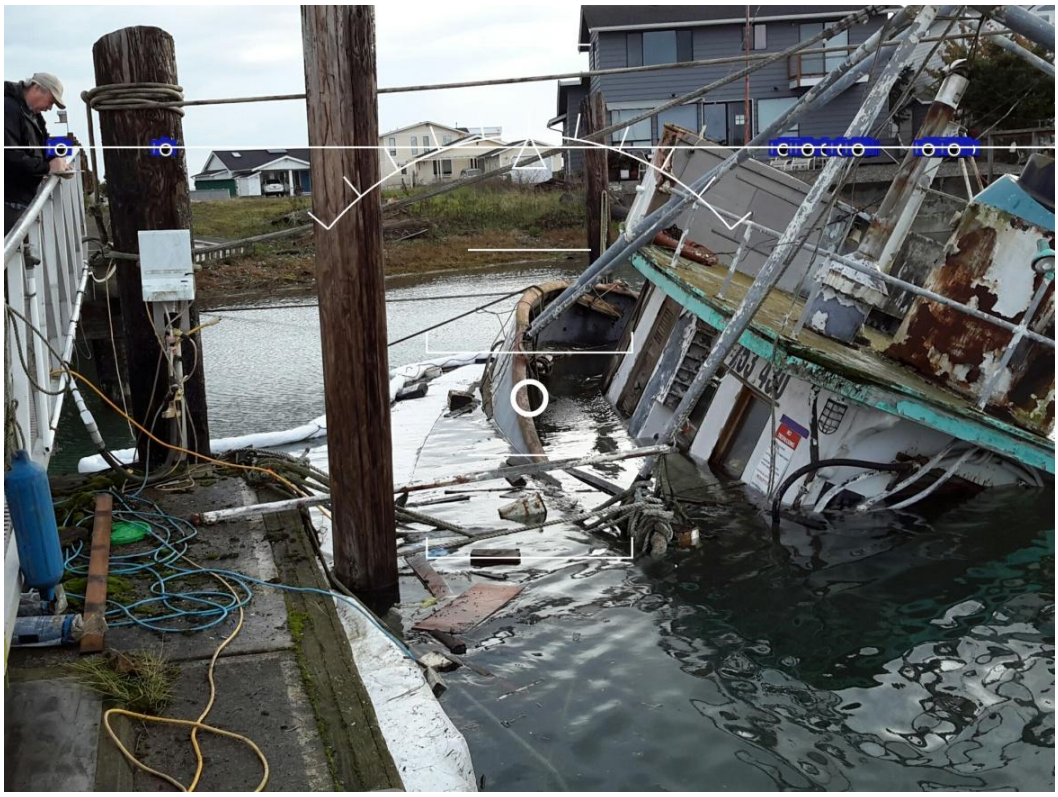


Figure 4. Sorbent boom, absorbent roll, and debris between dock and vessel.

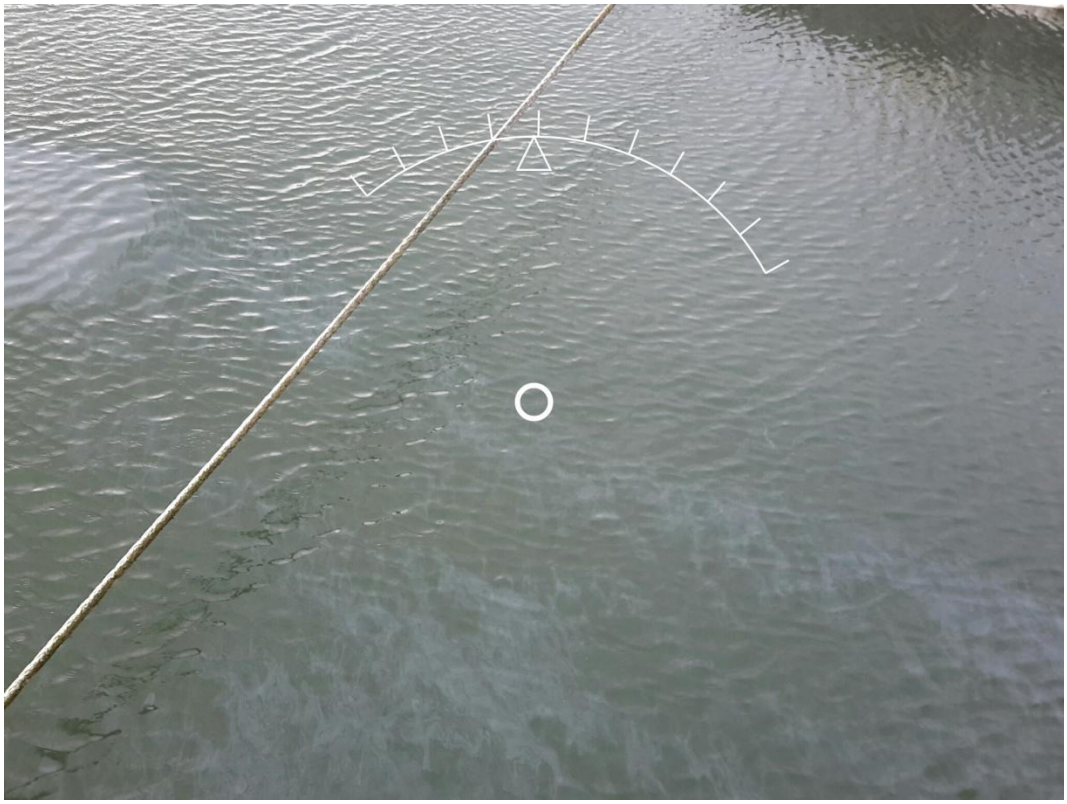


Figure 5. Uncontained sheen between bow of vessel and shoreline.

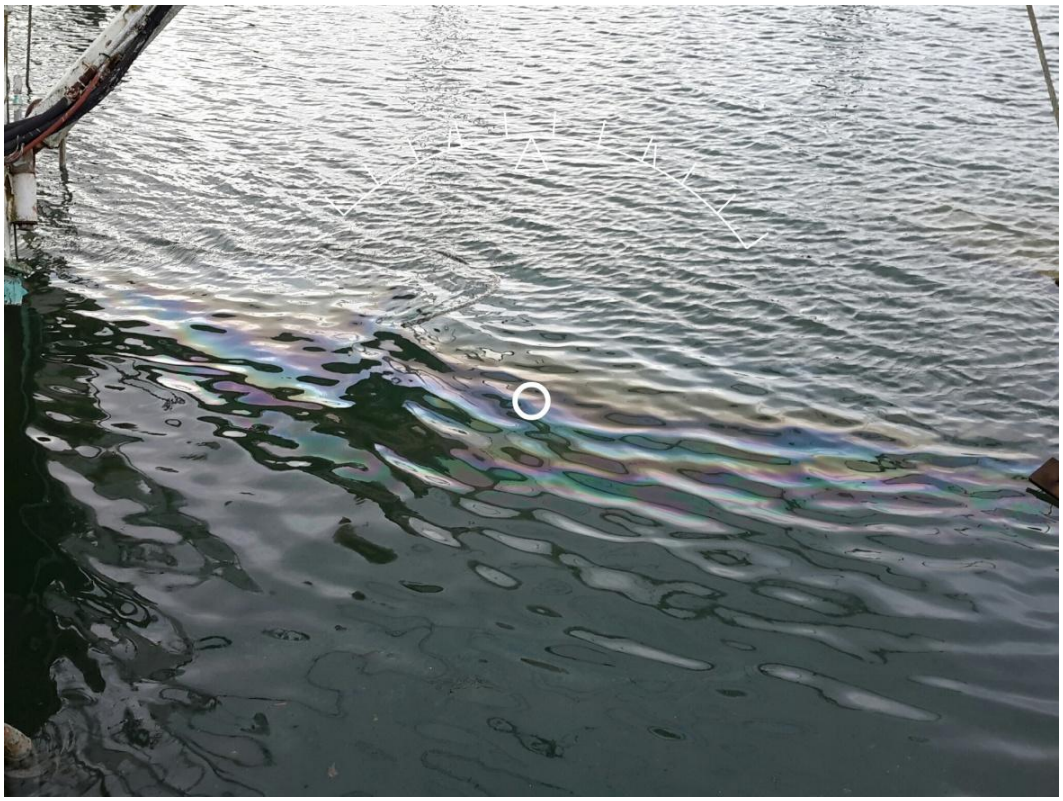


Figure 6. Uncontained sheen behind cabin of F/V *Furious Sea*.

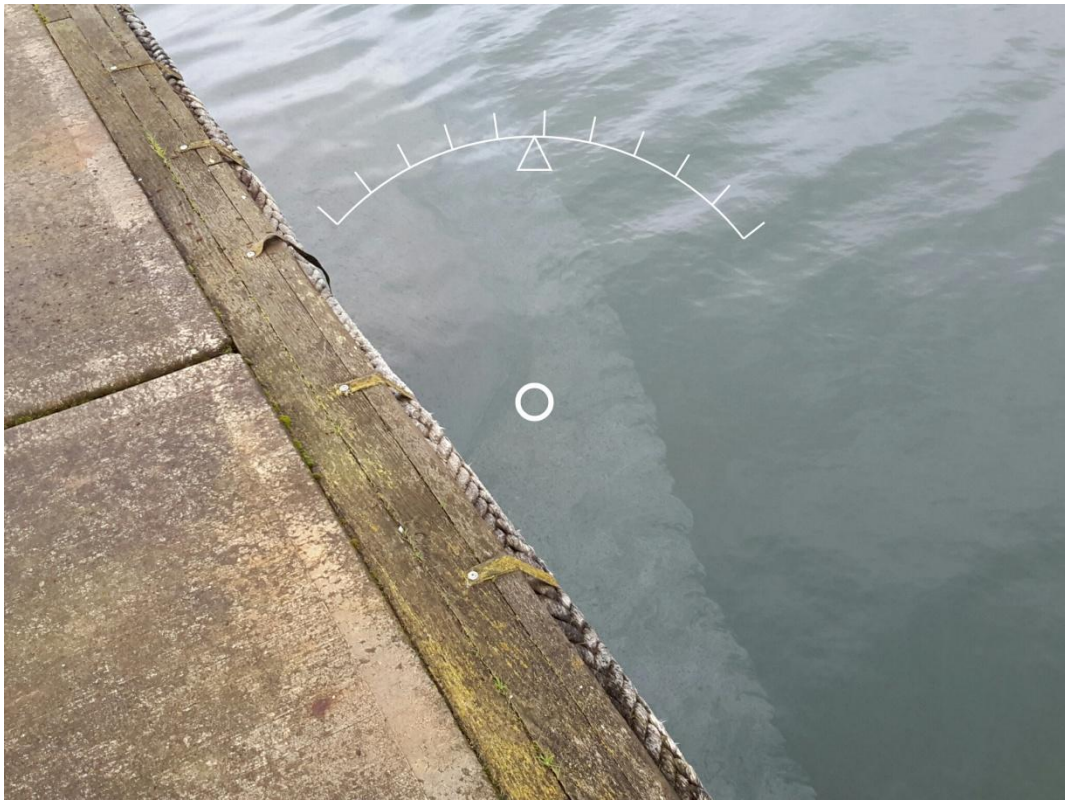


Figure 7. Uncontained sheen along north side of dock, flowing to the west.

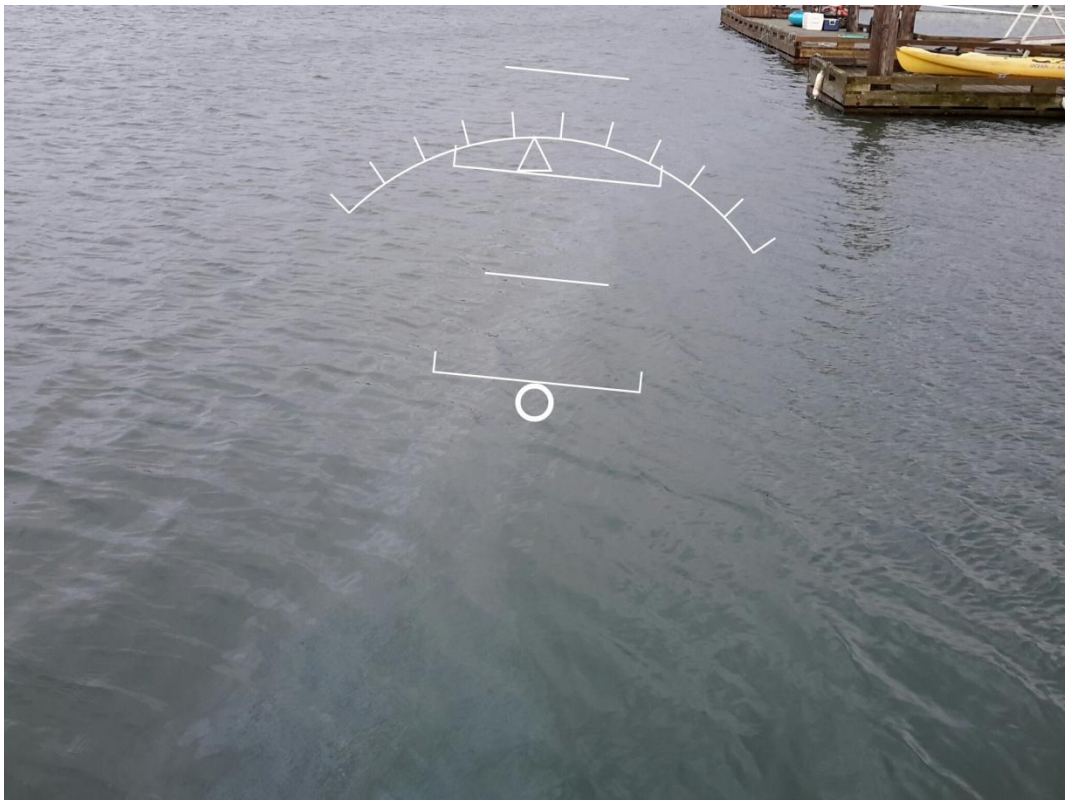


Figure 8. Uncontained sheen flowing to north with wind towards and to two docks north.

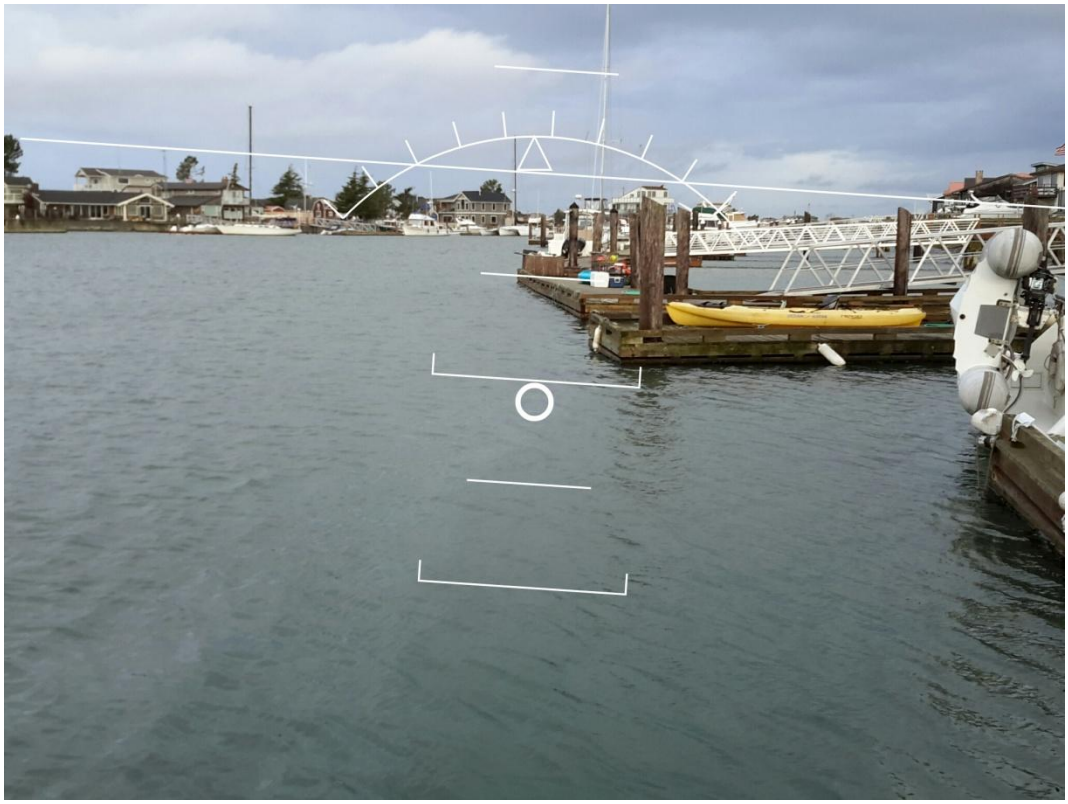


Figure 9. Uncontained sheen flowing along the outside edges of two docks to the north.

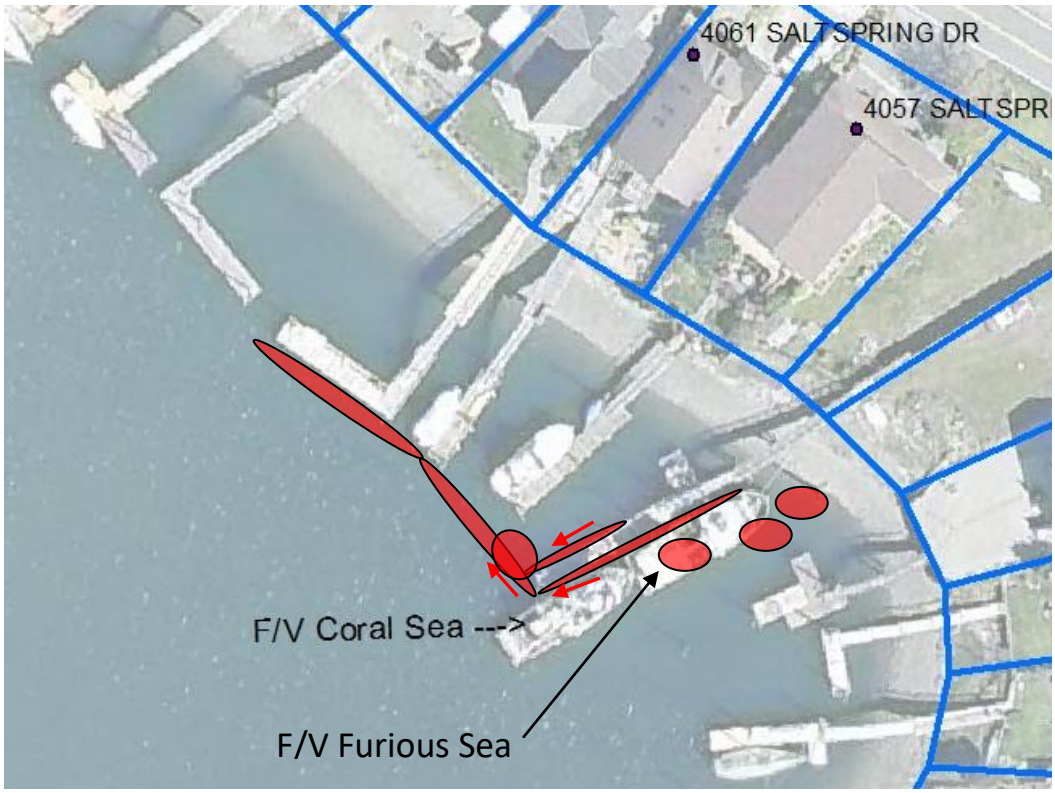


Figure 10. Distribution of sheen visible from dock and shore at the time of visit. Red ovals indicate the general areas where sheens were observed. The red arrows indicate the direction of movement of the sheen.